



ORIGINAL

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April 4, 2003

RECEIVED

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room TW-A325  
Washington, DC 20554

APR - 4 2003

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

RE: Section 68.4(a) of the Commission's Rules Governing  
Hearing Aid Compatibility Telephone  
WT Docket No. 01-309 EX PARTE

Dear Ms. Dortch:

On April 3, 2003, representatives of Siemens and Cingular Wireless met in a meeting with members of the Office of Engineering and Technology to discuss issues related to the referenced proceeding.

Two documents were used for discussion purposes, the attached document and the ex parte document previously submitted by Siemens and Cingular Wireless on January 22, 2003. Please associate this notification and accompanying material with the referenced docket proceeding.

The list of attendees for the meeting is attached. If there are any questions concerning this matter, please contact the undersigned.

Sincerely,

A handwritten signature in dark ink that reads 'Ben G. Almond'.

Ben G. Almond  
Vice President-Federal Regulatory Affairs

Attachments

Cc: Julius Knapp  
Dr. Rashmi Doshi  
William S. Hurst

No. of Copies rec'd 0+1  
List ABCDE

Attendees – April 3, 2002

OET

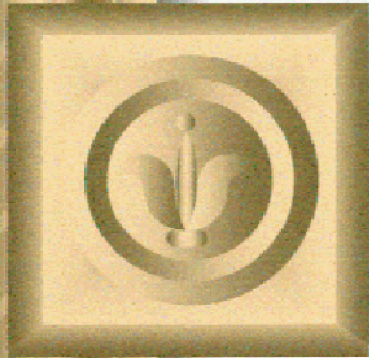
Julius Knapp – Deputy Chief  
Dr. Rashmi Doshi – Chief, FCC Laboratory Division  
William S. Hurst – Laboratory Division

Siemens

Ross Vincenti – Vice President & General Counsel  
Stephen Berger – Technical Consultant

Cingular Wireless

Susan K. Palmer – Director, Federal Regulatory Affairs  
Ben G. Almond – undersigned



# Hearing Aid Compatibility

## Testing & Technical Update

**Cingular Wireless**  
**Siemens**

*Ex Parte* – **WT Docket 01-309**



# Overview

- **Results of Siemens hearing aid and handset testing**
- **T-Coil and Functional Equivalency**
- **ANSI C63. 19 Background**
- **Cingular/Siemens Earlier Ex Parte Recommendations (Chart)**
  - **Technical Incubator and Steering Committee**
  - **Communication/Education**



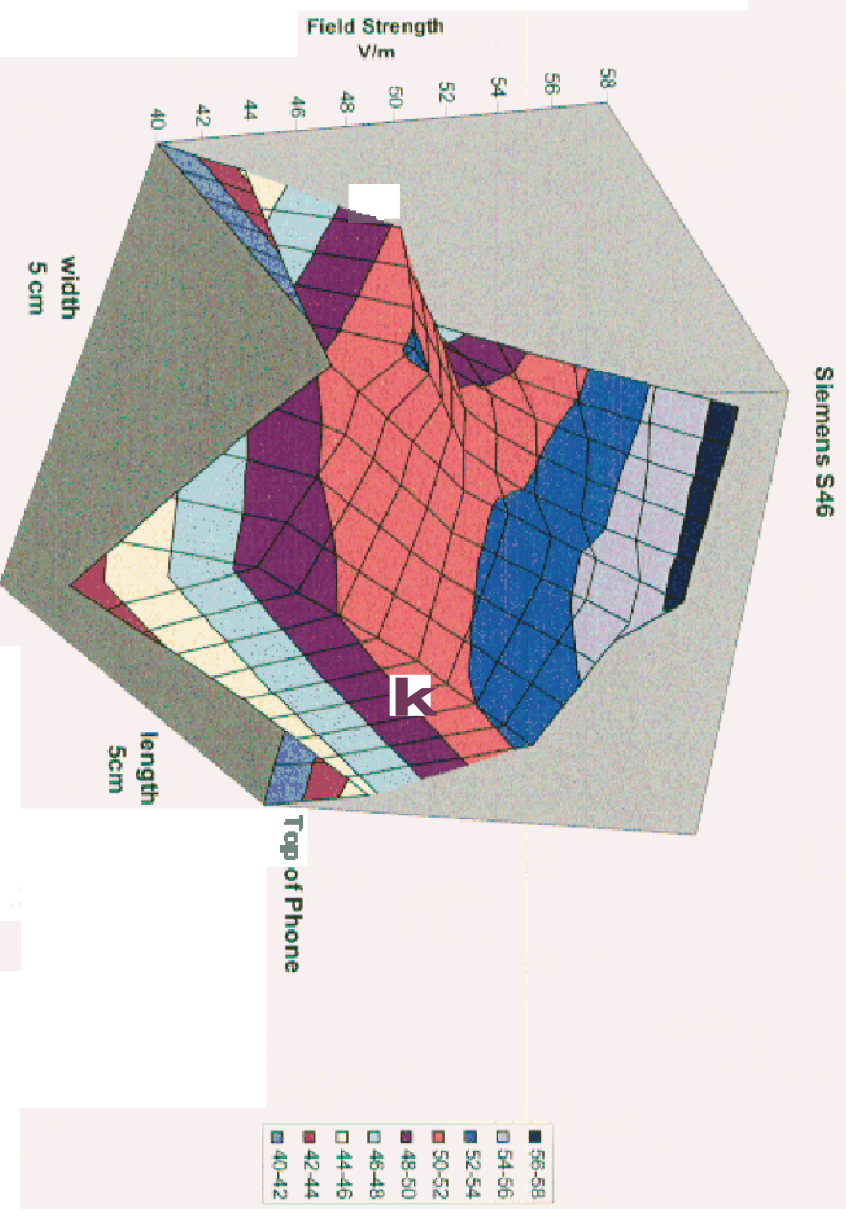
# Technical Overview

- ***The Siemens handset and hearing aids performed well together***
- ***ANSI C63.19 accurately predicted performance***
- ***To achieve our recommended T-Coil performance flexible design options are needed.***

## Results of Siemens Testing

- **Siemens handsets were tested and achieved the U3 & U4 category per ANSI C63.19**
- **Siemens Triano S hearing aid also achieved the U4 category for RF immunity**
- **When tested together the Triano S hearing aid had no audible interference near the handsets in microphone mode, but some interference in T-Coil mode.**

# Siemens S46 Handset plots – E-Field Plot



## ANSI C63.19 System Classification

System Classification	Articulation Index	U Category Sum
	AI	Sum of Hearing Aid (U Category) + Telephone (U Category)
Usable	0.3	= 4
<b>Normal Use</b>	<b>0.5</b>	<b>= 5</b>
Excellent Performance	0.7	>= 6

- **The combination of the U category of the phone and the hearing aid must equal 5 or greater to achieve the recommended performance level.**

- *The most appropriate forum to set specific limits is a technical standards committee with both industries represented*



## Next Step User Testing

- Lab testing with hearing aids users is under development with Gallaudet University
- Field testing will then be conducted with actual hearing aid users
- Target Date for Completion: Late Spring
- A report with analysis and summary of the results will be made available and is expected to be useful in developing consumer guidance



# Flexible Design Options Should Be Considered

- **T-Coils** may not always be the best answer
  - When given a technical choice inductive loop (T-Coil) systems sell the least even though they are the cheapest
  - Increasing level of electronic saturation in work and public environments make T-Coil use impossible in many locations.
  - Only a small percentage of hearing aid users use T-Coils



# Flexible Design Options Should Be Considered

- Form factors, especially in small phones, impact ability to build in T-coil antenna
  - A dynamic speaker will produce a T-Coil signal that may pass the current Part 68 level but be too low for many users
  - A more effective solution requires much higher signal levels and so a separate T-Coil antenna and special circuitry
- Other forms of coupling should be allowed if functionally equivalent

*Solutions should be identified and tested in a Technical Incubator*

# ANSI C63.19 Questions

*Posed by the FCC and others*

- Why conduct **testing** in **analog mode**?

**In early ANSI meetings, *analog phones appeared to cause changes to the gain* in some hearing aids. However, similar problems have not been noted in recent years.**

***Whether it is necessary to continue analog testing should be examined and the standard refined, if needed.***

# ANSI C63.19 Questions

*Posed by the FCC and others*

- **What are issues that can make the results of user testing appear inconsistent with ANSI tests?**

*In many cases, user testing is performed without proper controls. Much of the data is anecdotal. The impact of immunity of the user's hearing aid or the transmission level of the phone are not addressed.*

# ANSI C63.19 Questions

*Posed by the FCC and others*

- **How can the results of hearing aid and handset testing help consumers?**

***When hearing aids and handsets are properly matched, consumers can be guided to effective solutions with a high degree of confidence.***

# Cingular/Siemens Recommendations

- **Technical Focus – unbiased assessment**
- **Technical Incubator with engineers specializing in hearing and wireless technologies that develop and test solutions**
- **Independent Steering Committee, not Federal Advisory Committee, to guide efforts**
- **FCC/FDA must actively participate**

# Education and Outreach

- In addition to guiding the Technical Incubator, the Steering Committee can address non-technical issue
  - Effective use of handsets
  - Determining what combinations work can be complex.
  - Support by audiologist and other relevant professionals may be required.
- The hearing aid and wireless industry, consumers and hearing health professionals must work together to simplify product selection and provide additional assistance.



# Summary of Technical Issues

- Testing demonstrated that Siemens hearing aid designs effectively mitigated interference
- The ANSI C63.19 standard is effective.
  - Minor variations in user testing can impact apparent outcome.
  - Variables must be monitored carefully to test effectively.
  - The standard should be updated to address the current state of technology.
- Our recommended level of T-Coil performance is feasible with an external accessory

# **A Cooperative and Comprehensive Approach is Needed**

- Cingular/Siemens believe that both technical and user issues must be addressed
- Both wireless and hearing aid manufacturers must work toward a cooperative solution-based approach, endorsed by both the FCC and FDA.

## **Steps should include:**

- An unbiased technical assessment of the issue
- A Technical Incubator with a steering committee with active participation and monitoring by both agencies
- Development of easy and consistent information on product selection and usage